



Faculty of Language and Communication

**Effects of Images on the Recall and Retention of Year 1 Malaysian
Pupils' Vocabulary Breadth and Depth**

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**Doctor of Philosophy
2021**

Effects of Images on the Recall and Retention of Year 1 Malaysian Pupils'
Vocabulary Breadth and Depth

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A thesis submitted

In fulfillment of the requirements for the degree of Doctor of Philosophy

(Language Learning and Teaching)

Faculty of Language and Communication
UNIVERSITI MALAYSIA SARAWAK

2021

DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Malaysia Sarawak. Except where due acknowledgements have been made, the work is that of the author alone. The thesis has not been accepted for any degree and is not concurrently submitted in candidature of any other degree.



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Date : **25 November 2021**

ACKNOWLEDGEMENT

I am eternally grateful to the many people who have participated in one way or another to make the writing of this thesis possible. Their contributions are truly appreciated and gratefully acknowledged. Among the most momentous of all my academic journeys, this undertaking has taught me much, as well as humbled me.

To my supervisors, Professor Dr Ambigapathy Pandian and Associate Professor Dr Soubakeavathi A/P Rethinasam, your continuous advice and guidance have provided me with the much needed support and encouragement. Thank you very much.

I also take delight in thanking friends and colleagues, as well the school teachers and pupils who have each played a role in this immensely enriching experience. A special mention goes to Debbie for your steadfast friendship and support, and to Low who silently cheered for me and took pride in my milestones.

Not to be forgotten is my family who deserves my deepest appreciation and gratitude. To my mother-in-law and sister, Chan Kooi Wah and Bee Bee, your unwavering support means the world to me, especially in caring for Justin. As for my husband, Keong, and son, Justin, your understanding and patience never fail to amaze me. Lastly, to my late parents, Lee Hean Swee and Tan Kheng Poh, who remain always in my heart. This thesis is dedicated in memory to both of you.

“I am able to graciously survive the PhD from the grace that comes from enthusiasm, perseverance, willpower, fellowship, love, and prayer”

ABSTRACT

This study examined the impact pictures had on the English vocabulary breadth and depth knowledge of Malaysian Year 1 pupils in rural national primary schools through the Picture Word Inductive Model (PWIM). Designed by Calhoun (1999), the approach primarily utilises pictures to elicit words from learners' existing listening and speaking vocabularies. Additionally, the use of mother tongue is permitted. The intervention employed a pretest-posttest-delayed posttest control-group design and adapted the Yes-No Recognition Test (YNRT) as well as the Word Associates Test (WAT) to measure the recall and retention of subjects' vocabulary breadth and depth respectively. Both instruments were duly tested for reliability. A total of 180 pupils from three primary schools in the same district participated in the research, comprising the Experimental group ($n = 90$) and the Control group ($n = 90$). Data collected from pretests, posttests, and delayed posttests was analysed and assessed for statistically significant differences between the experimental and the control group. The findings revealed that those who experienced the PWIM intervention achieved superior vocabulary scores at the posttest and delayed posttest levels compared to those in the control group, denoting greater vocabulary breadth and depth recall and retention that reflects the effectiveness of the intervention in enhancing vocabulary acquisition among young Malaysian learners.

Keywords: Images, vocabulary breadth and depth, recall, retention, PWIM

***Kesan Gambar ke atas Daya Ingat Kembali dan Retensi Perolehan Perbendaharaan
Kata dalam Kalangan Pelajar Tahun 1 di Malaysia***

ABSTRAK

Kajian ini bertujuan untuk mengenal pasti kesan gambar terhadap perolehan perbendaharaan kata dalam kalangan sekumpulan pelajar Tahun 1 di sekolah rendah kebangsaan menggunakan Model Induktif Gambar-Kata (PWIM). Model yang dibangunkan oleh Calhoun (1999), menggunakan gambar untuk mencungkil perkataan daripada perbendaharaan kata lisan dan sebutan pelajar. Tambahan, penggunaan bahasa ibunda adalah dibenarkan. Intervensi menggunakan reka bentuk praujian-pascaujian-tertunda, pascaujian kumpulan kawalan Yes-No Recognition Test (YNRT) serta Word Associates Test (WAT) bagi mengukur daya ingat kembali dan retensi perolehan perbendaharaan kata pelajar. Kedua-dua instrumen dinilai bagi memastikan kebolehpercayaannya. Sejumlah 180 pelajar daripada 3 buah sekolah rendah di daerah yang sama menyertai kajian ini yang terdiri daripada kumpulan eksperimental ($n = 90$) dan kumpulan kawalan ($n = 90$). Data yang terkumpul daripada praujian, pascaujian, dan pascaujian tertunda dianalisis dan dinilai untuk meneliti perbezaan signifikan dari segi eksperimental dan kumpulan kawalan. Kajian menunjukkan bahawa mereka yang menjalani intervensi tersebut mencatatkan markah perbendaharaan kata yang sangat tinggi pada tahap pascaujian dan pascaujian tertunda berbanding kumpulan kawalan menandakan bahawa daya ingat kembali dan pengekalan pelajar mencerminkan keberkesanan intervensi dalam memperkasakan pemerolehan perbendaharaan kata dalam kalangan pelajar Malaysia.

Kata kunci: *Gambar, perbendaharaan kata, daya ingat kembali, retensi, PWIM*

TABLE OF CONTENTS

	Page
DECLARATION	i
ACKNOWLEDGEMENT	ii
ABSTRACT	iii
<i>ABSTRAK</i>	iv
TABLE OF CONTENTS	v
LIST OF TABLES	xi
LIST OF FIGURES	xiv
LIST OF ABBREVIATIONS	xvi
CHAPTER 1: BACKGROUND OF THE STUDY	1
1.1 Introduction	1
1.2 Vocabulary	4
1.3 The Picture Word Inductive Model (PWIM)	18
1.4 Statement of the Research Problem	20
1.5 Aims, Objectives and Significance of the Study	26
1.5.1 Research Objectives	26
1.5.2 Research Questions	27
1.5.3 Research Hypotheses	28
1.6 Significance of the Study	29

1.7	Operational Definition of Terms	30
1.7.1	Vocabulary Knowledge	30
1.7.2	Vocabulary Breadth and Depth	30
1.7.3	Vocabulary Acquisition	31
1.7.4	Young Learners	31
1.7.5	Vocabulary Knowledge Recall	32
1.7.6	Vocabulary Knowledge Retention	32
1.7.7	Vocabulary Testing	33
1.7.8	Collaborative Learning	34
1.8	Summary	34
CHAPTER 2:	LITERATURE REVIEW	37
2.1	Overview	37
2.2	Vocabulary	37
2.2.1	Significance of Vocabulary	38
2.2.2	Vocabulary knowledge: Breadth and Depth	46
2.2.3	Vocabulary Size	49
2.3	Vocabulary Acquisition	53
2.4	Vocabulary Testing	55
2.4.1	Measuring Young Learners' Vocabulary	57
2.4.2	Measuring Vocabulary Breadth	59

2.4.3	Measuring Vocabulary Depth	65
2.5	Strategies of Vocabulary Learning in a Second Language	70
2.6	The Picture Word Inductive Model (PWIM)	76
2.6.1	Implementation and Past Studies of PWIM	79
2.6.2	Implementation of PWIM	79
2.6.3	Past Studies of PWIM	83
2.7	Theories of Picture Word Inductive Model (PWIM)	92
2.7.1	Theory of Cognitive Psychology	94
2.7.2	General Systems Theory: Developmental Priming Mechanisms	120
2.7.3	Picture Superiority Effect (PSE)	124
2.8	Theoretical framework	142
2.9	Summary	142
CHAPTER 3: METHODOLOGY		146
3.1	Introduction	146
3.2	Research Design	146
3.3	Conceptual Framework	151
3.3.1	Dependent and Independent Variables	152
3.3.2	Moderator Variables	152
3.3.3	Control Variables	153
3.4	Subjects	155

3.5	Intervention	163
3.6	Instruments	168
3.6.1	Selection of Target Word List	168
3.6.2	Selection of Pictures	169
3.6.3	Test Materials	171
3.6.4	Questionnaire	181
3.7	Data Collection Procedures	186
3.7.1	Phase 1: Preliminary Vocabulary Testing for Word Selection and Picture Selection	187
3.7.2	Phase 2: Piloting and Administering Test-retest	187
3.7.3	Phase 3: Briefing and Training of Teachers	188
3.7.4	Phase 4: Pre-testing, Pre-intervention Questionnaire and Obtaining Consent	189
3.7.5	Phase 5: Intervention Period	190
3.7.6	Phase 6: Post-testing and Delayed Post-testing	193
3.8	Data Analysis Procedures	193
3.9	Pilot Study Results	197
3.10	Limitations and Delimitations	201
3.10.1	Limitations	201
3.10.2	Delimitations	203

CHAPTER 4: DATA ANALYSIS	205
4.1 Introduction	205
4.2 Results	205
4.2.1 Vocabulary Breadth Knowledge	206
4.2.2 Vocabulary Depth Knowledge	215
4.2.3 Summary	223
4.3 Discussion of the Findings	224
4.3.1 Vocabulary Breadth Knowledge Recall	224
4.3.2 Vocabulary Breadth Knowledge Retention	232
4.3.3 Vocabulary Depth Knowledge Recall	236
4.3.4 Vocabulary Depth Knowledge Retention	241
CHAPTER 5: DISCUSSION, RECOMMENDATIONS AND CONCLUSION	245
5.1 Introduction	245
5.2 Summary	245
5.3 Theoretical Contribution	248
5.4 Contributions for Future Research	249
5.4.1 Recommendations for English Language Teacher	250
5.4.2 Recommendations for Module Writers	253
5.4.3 Recommendations for Policy Makers	254
5.5 Directions for Future Research	255

5.5	Conclusions	256
	REFERENCES	259
	APPENDICES	347

LIST OF TABLES

		Page
Table 2.1	The two systems that serve memory	131
Table 3.1	Examples of language studies on young learners	159
Table 3.2	Schedule for the intervention	167
Table 3.3	T-test results for the reliability of the Interactive and Print Yes-No Recognition Test: Vocabulary breadth knowledge	179
Table 3.4	T-test results for the reliability of the WAT-M: Vocabulary depth knowledge	180
Table 3.5	Summary of amendments made to questionnaire	183
Table 3.6	Cronbach's alpha: Analysis of questionnaire items reliability	185
Table 3.7	A summary of the study schedule	186
Table 3.8	Research matrix	193
Table 3.9	Levene's Test for assumption of homogeneity of variances	197
Table 3.10	Independent samples t-test: Comparison of pre-test scores between groups for breadth and depth	198
Table 3.11	Post-test results: Vocabulary knowledge recall for breadth and depth	199
Table 3.12	Independent samples <i>t</i> -test: Comparison of post-test scores between groups for breadth and depth	199
Table 3.13	Post- and delayed post-test results: Vocabulary knowledge retention for breadth and depth	200
Table 3.14	Independent samples <i>t</i> -test: Comparison between groups for differences in post- and delayed post-test for breadth and depth	200

Table 4.1	Summary of mean scores: Vocabulary breadth and depth	206
Table 4.2	Levene's Test for assumption of homogeneity of variances	207
Table 4.3	Descriptive statistics of pretest for baseline similarity between groups	208
Table 4.4	Independent samples <i>t</i> -test of pretest for significant difference between groups	208
Table 4.5	Descriptive statistics of posttest for vocabulary breadth knowledge recall	209
Table 4.6	Independent samples <i>t</i> -test of posttest for significant difference in recall	210
Table 4.7	Descriptive statistics of differences between posttest and delayed posttest for vocabulary breadth knowledge retention	212
Table 4.8	Comparison of differences between posttest and delayed posttest for vocabulary breadth knowledge retention	212
Table 4.9	Independent samples <i>t</i> -test of posttest/delayed posttest for significant difference in vocabulary breadth knowledge retention	213
Table 4.10	Levene's Test for assumption of homogeneity of variances	215
Table 4.11	Descriptive statistics of pretest for baseline similarity between groups	216
Table 4.12	Independent samples <i>t</i> -test of pretest for significant difference between groups	217
Table 4.13	Descriptive statistics of posttest for vocabulary depth knowledge recall	218

Table 4.14	Independent samples T-test of posttest for significant difference in recall between groups	219
Table 4.15	Descriptive statistics of differences between posttest and delayed posttest for vocabulary depth knowledge retention	220
Table 4.16	Comparison of differences between posttest and delayed posttest for vocabulary depth knowledge retention	221
Table 4.17	Independent samples <i>t</i> -test of posttest/delayed posttest for significant differences in vocabulary depth knowledge retention	222
Table 4.18	Summary of test performance between groups	224

LIST OF FIGURES

	Page
Figure 2.1 Word Associates Test item (Read, 1993, p. 359)	67
Figure 2.2 Word Associates Test item (Read, 1998, p. 46)	67
Figure 2.3 Word Association Test-SV item (Schoonen & Verhallen, 2008, p. 219)	68
Figure 2.4 Lesson structure of the Picture Word Inductive Model (Calhoun, 1999, p. 23)	77
Figure 2.5 Piaget's Theory of Cognitive Development (Huitt & Hummel, 2003)	97
Figure 2.6 Multi Store Model. Adapted from “Multi Store Model of Memory - S. A. Atkinson and R. M. Shiffrin, 1968” (McLeod, 2007)	100
Figure 2.7 Concept attainment model. Adapted from “Models of Teaching (<i>Eighth Edition</i>),” (Joyce, Weil, & Calhoun, 2009, p. 117)	117
Figure 2.8 Levels of concept attainment (Klausmeier & Allen, 1978, p. 17)	118
Figure 2.9 Developmental priming mechanisms. Adapted from “Early Intervention and Early Experience,” (Ramey & Ramey, 1998, p. 115)	122
Figure 2.10 Information processing (Paivio, 1971, p. 65)	130
Figure 2.11 The Sensory-semantic model of picture and word encoding (Nelson, Reed, & McEnvoy, 1977, p. 486)	135
Figure 2.12 Altering retrieval demands reverses the PSE (Weldon & Roediger, 1987, p. 277)	140
Figure 2.13 Theoretical framework of the present study	142

Figure 3.1	Pretest-posttest-delayed posttest control-group design of the present study (adapted from Johnson and Christensen, 2012)	149
Figure 3.2	Conceptual framework of the study	151
Figure 3.3	Lesson structure of the Picture Word Inductive Model (Calhoun, 1999, p. 23)	164
Figure 3.4	Lesson structure of the Picture Word Inductive Model as adapted for the present study	165
Figure 3.5	Lesson structure of the English lessons of the control groups	192
Figure 5.1	Steps of PWIM-A	252

LIST OF ABBREVIATIONS

AEA	Area Education Agency
CEFR	Common European Framework of Reference
DCT	Dual-Coding Theory
DKSP	Dokumen Standard Kurikulum dan Pentaksiran Standard
EFL	English as a Foreign Language
ELSQC	English Language Standards and Quality Council
ESL	English as a Second Language
HOTS	Higher Order Thinking Skills
IELTS	International English Language Testing System
IRA	International Reading Association
KBSR	Kurikulum Baru Sekolah Rendah
KPM	Kementerian Pendidikan Malaysia
KSSR	Kurikulum Standard Sekolah Rendah
L1	First Language
L2	Second Language
LAD	Language Acquisition Device
LINUS	Literacy and Numeracy Screening
LTM	Long Term Memory
MoE	Ministry of Education
MSM	Multi Store Memory
MUET	Malaysian University English Test
NELP	National Early Literacy Panel
NICHD	National Institute of Child Health and Human Development

NIFL	National Institute for Literacy
NPS	National Primary School
NTCPS	National-Type Chinese Primary School
NTTPS	National-Type Tamil Primary School
OECD	Organisation for Economic Cooperation and Development
PPVT	Peabody Picture Vocabulary Test
PPVT-4	Peabody Picture Vocabulary Test-4 th Edition
PPVT-III	Peabody Picture Vocabulary Test-Third Edition
PPVT-R	Peabody Picture Vocabulary Test (revised edition of 1981)
PSE	Picture Superiority Effect
PWIM	Picture Word Inductive Model
PWIM-A	Picture Word Inductive Model -Adapted
SBELC	Standards-Based English Language Curriculum
SJK	Sekolah Jenis Kebangsaan
SJK (C)	Sekolah Jenis Kebangsaan (Cina)
SJK (T)	Sekolah Jenis Kebangsaan (Tamil)
SK	Sekolah Kebangsaan
SL	Second Language
SLA	Second Language Acquisition
SM	Sensory Memory
STM	Short Term Memory
TAP	Transfer-Appropriate Processing
TOEFL	Test of English as a Foreign Language
TVIP	Test de Vocabulario en Imagenes Peabody (Spanish version)

VKS	Vocabulary Knowledge Scale
VLТ	Vocabulary Levels Test
WAF	Word Associates Format
WAT	Word Association Test
WAT-M	Word Association Test (modified for the study)
WAT-SV	Word Association Test (by Schoonen and Verhallan)
YNVT	Interactive and Print Yes-No Vocabulary Test

CHAPTER 1

BACKGROUND OF THE STUDY

1.1 Introduction

Over the years, language researchers (Armstrong, 2000; Harmer, 2001; Kim & Gilman, 2008; Mayer & Sims, 1994) have postulated that pictures, employed correctly, is an important medium for more effective learning, particularly within the realm of vocabulary acquisition (Sadoski, 2005). Pictures warrant comprehensive attention for they are a major component of cognitive processing (Cohen, 2012). Paivio's dual coding theory states specifically that information has always been processed via two distinct channels, verbal and visual, advocating usage of pictures in bridging vocabulary to comprehension to facilitate deeper processing.

According to Anderson (1971), by adding an imagery component individuals learn two to three times as much as those who learn with just words. Recent studies on vocabulary instructions (e.g., Boulware-Gooden et al., 2007; Carpenter & Olson, 2012; Kim & Gilman, 2008; Moore & Calvert, 2000; St. John & Vance, 2014) have documented positive findings. Both Kim and Gilman (2008), and Moore and Calvert (2000) stated that pairing pictures with words supports vocabulary learning. Moreover, Boulware-Gooden et al.'s (2007) study with young learners recorded higher vocabulary measure after experiencing a vocabulary acquisition strategy that used images as opposed to their counterparts who did not. Underscoring the effectiveness of using pictures in language learning, more current studies such as Carpenter and Olson (2012), and St. John and Vance's research (2014) that investigated the efficacy of teaching methods involving pictures in language development, reported successful language learning, in particular vocabulary knowledge.

Reputedly, pictures also contribute to increased enjoyment of the learning process as well as aid to heighten the level of interaction and motivation among learners. Ryan (1993, as cited in Topsakal & Oversby, 2012) professed that carefully selected pictures can “be a catalyst giving rise to the production of thousands of words” (p. 1). Thus, rendering learning of vocabulary highly more effective with the employment of pictures. There appears to be a general consensus that images do not only contribute to more effective learning but they also have an edge over recall and retention as well since recollection by pictures is by far superior than just words by themselves (e.g., Hornby, 2004; Nelson, 1979; Nelson, Reed, & Walling, 1976; Pavio, 1986; Underwood, 1989). Cohen (2012) further stressed that learners would benefit in terms of acquiring the meaning of the lexical items, remembering them, as well as retaining the knowledge over time.

Pictures are deemed exceedingly fitting for language learning, particularly in the teaching of a variety of English language components such as vocabulary. Specialists in research-based instructional strategies, Joyce, Weil, and Calhoun (2008) advocated specifically that pictures be used for vocabulary acquisition among children as it has been proven to be highly effective. The first edition of *Models of Teaching* focuses extensively on various teaching models (Joyce & Weil, 1972) and it was conceived to provide teachers with a base for professional teaching towards more effective learning and teaching. Over the years, the models were further honed and improved upon in subsequent editions, the latest being the *Models of Teaching* (9th ed.) by Joyce, Weil, and Calhoun (2015). One of the models of teaching highlighted is the Picture Word Inductive Model (PWIM). Calhoun (1999) has been employing PWIM since 1976, and with such great success that today, PWIM is employed in classrooms in America, Canada, Sweden and Australia, among others, to build sight vocabularies and teach beginning reading and writing. Closer to home, Loh

(2012, 2017), a senior lecturer at the National Institute of Education, Nanyang Technological University in Singapore also recommended PWIM for its effectiveness in engaging pupils and abetting them in their learning and understanding of vocabulary, particularly in the case of young learners. Loh (2017) employed Picture Word Inductive Model on his grade 1 class that was made up of 7 year olds.

The significance of vocabulary development is well-established with the value of vocabulary knowledge closely entwined with its capacity affecting students' literacy development which further extends to their overall academic achievement. The notion that learners' vocabulary needs have to be seen early in their schooling is no longer as controversial given consistent findings that vocabulary instructions are a critical element of early language and literacy programmes. Hence, there is broad consensus that there is a real urgency to get children off to an early start in vocabulary learning, preferably at preschool level. It has been established that those (children) who begin formal schooling with limited vocabulary knowledge may be compounded by the Matthew effect that can only serve to further handicap them in language development (Stanovich, 1986).

Matthew Effect, derived from the verse, "For unto every one that hath shall be given, and he shall have abundance: but from him that hath not shall be taken away even that which he hath." (Matthew 25:29), refers to the stronger getting stronger while the weaker gets weaker (Lamb, 2011). In other words, where language education is concerned, Matthew effect refers to the notion that those stronger in literacy skills will prevail and continue to improve while the weaker ones will deteriorate or stagnate, at best. Based on Stanovich's (2000) observation, within the domain of reading, children who begin school with even the slightest edge in phonemic awareness, start reading independently faster which results in

additional practice that will see an increase in enjoyment in reading and this in turn encourages them to read more. Alternatively, weaker ones will be slower in starting independent reading. Also, children tend to abhor early reading should they encounter difficulty in the activity, thus ending up reading even less than the strong readers. Hence, if steps are not taken to rectify the situation, the gap between these two groups can only grow wider with the strong getting stronger whilst the weak gets weaker.

Consequently, vocabulary acquisition should not be neglected. Instead, it should be accorded the due attention it deserves, predominantly among young learners. In this vein, the researcher proposed to adapt Calhoun's (1999) PWIM model of teaching on Year 1 pupils from national primary schools, national-type Chinese primary schools and national-type Tamil primary schools in a rural area in Malaysia. The quasi-experimental study aims to examine how the adapted PWIM affects the recall and retention of the vocabulary breadth and depth of these young learners.

1.2 Vocabulary

The study of vocabulary knowledge has grown over time with the importance of addressing underachievement in vocabulary knowledge among young learners well-documented (Biemiller, 2003; Hadley & Dickinson, 2018). Consistent findings have pointed to the possibility that learners, as young as those in preschool, with a gap in vocabulary knowledge will experience compromised language proficiency later in life (Biemiller & Slonim, 2001; Cunningham & Stanovich, 1998; Wagner et al., 1997). Thus, researchers conclude that it is of critical importance to start attending to the vocabulary needs of children as young as preschool, if not younger (McKeown & Beck, 2014).